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ABSTRACT

Economic cooperation and technology transfer have been most effective in developing countries with colonial roots. Developing countries also feel most comfortable with countries that share a common language and some cultural understanding. However, other cultural elements are often ignored in technology transfer, leading to failure of the transfer, including the role of women in the developing society, lack of understanding of technical language, lack of sophistication to carry through technical processes rapidly enough, and cultural and linguistic sensitivities leading to resistance. The technology transfer program should: (1) contribute to the overall strengthening of the local entities, especially academic institutions; (2) acquire the best qualified personnel; (3) provide economic incentives to trainees to return to their own countries after training; (4) be practical; and (5) respect and accommodate cultural norms, local laws, and political and religious attitudes. Economic development occurs in the following stages: meeting basic needs; creation of new programs and institutions for light commerce and industry; and graduation to developed-nation status. Past errors indicate that language, culture, and communication should be assessed at the outset of any development program. Academic institutions can play a significant role in program design and implementation. (MSE)

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ECONOMIC DEVELOPMENT THROUGH TECHNOLOGY TRANSFER: THE ROLES OF LANGUAGE AND COMMUNICATION

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Rather than presenting solutions, this paper is designed to act as a leader for discussions and considerations of the issues raised herein. Relevant issues in the context of language and communication in economic development will be brought forward, although the solutions to many of them need further in-country research and development. Examples of strenthening institutional links will indicate potential improvement in the transfer process, and the development process itself will also be considered. At the end of the paper, some thoughts will be offered as to criteria necessary for successful technology transfer.

The structure for the process of economic development began soon after World War II when the International Bank for Reconstruction & Development (IBRD -- World Bank) was formed after the Bretton Woods Conference with a primary focus on the reconstruction of Europe. Subsequently, the charter of the World Bank was broadened to include assistance to developing countries, and today the focus of most of the World Bank's activities is on the developing countries. Simultaneously, regional development institutions, such as the Asian Development Bank (ADB), African Development Bank (AfDB), InterAmerican Development Bank (IDB) and Caribbean Development Bank (CDB) were created to more specifically focus on regional development needs. Yearly annual expenditures from these institutions in terms of long-term credits and soft multi-year loans with generous grace periods and payment terms exceed several billion dollars.

The United Nations Development Programme (UNDP) also provides technical assistance grants to member countries worldwide aimed at sectoral reform, training and project implementation.

In addition to the above multilateral institutions, a number of bilateral agencies, including US AID, Canadian CIDA, Japanese JICA, Australian ADAB, KfW of Germany and Caisse Central of France have been extremely active in many countries in economic development linked to trade. While bilateral programmes until recently have largely focused on technical assistance activities in the rural and light commercial sectors, e.g., water pumping, roads, cottage industries, there is a new emergence of project specific activities where many bilaterals, in conjuction with lending institutions are focusing on large infrastructure and power developments and industrial projects. There have been many success stories resulting from this, also some dismal failures.

Economic cooperation and technology transfer have been found to be most efffective in those developing countries that have some colonial roots, for example British ties to India and East Africa, French ties to Francophone Africa, Dutch ties to Indonesia, Portugese ties to Brazil. This is because the cultural and linguistic background has already been examined and, for the most part, comprehended by the donor country, and a considerable period of time has been spent improving those relations. Developing countries also feel most comfortable with those countries that share a common language and some understanding of the cultural and religious ramifications indigenous to their cultures.

However, even in the most optimal cases of technology transfer, there still remain many key elements that are ignored by the developing countries until failure of the project has either occurred or is imminent.

All too often the role of women is not sufficiently taken into consideration. In some cultures, women are not allowed to work in certain sectors, if at all, outside the home. In others, women make up the major part of the work force that in a Western country would traditionally be reserved for men. In producing farm tools for African countries, this fact was totally ignored, and all the equipment produced was specifically designed to be used by men, whereas it is in reality the women who are the primary workers in the fields. This resulted in frustration on both sides and total failure of that particular technical assistance programme.

The United States is particularly adept at keeping pace with, and welcomes, the rapid technological improvements in the home: this is not so for other countries. Cultural habits that have been ingrained over hundreds of years cannot be broken with the export and assistance of foreign technology. Selling stoves to cook faster meals to a tradition that prefers boiling its food over a slow-burning pot is simply not going to work. Again, frustration, waste, and unecessary bad feelings result between the donor organization and recipient country.

Cultural forces may sometimes be so subtle that it is difficult to foresee them even by the most thoughtful project implementor. Linguistic-related issues are immediately more

apparent, although not necessarily better adressed. The transference of products with actual names suited to attract the population in one country may become distorted or laughable in meaning in another country, for example, Chevrolet found it impossible to market the Nova in Latin America where in Spanish "no va" means "it doesn't run".

Problems of language have later become apparent with the technology transfer of fairly highly sophisticated machinery. Although technical advisors may begin implementation of the project and local workers are trained efficiently in its operation, after the assitance team returns home and the locals turn to the training pamphlet at the first sign of trouble, all too frequently they can neither understand the language in which the pamphlet is written nor the concept, measurement, data, chemical formulae etc. behind that language. The pamphlet is written by a college-educated technologically advanced person and used by a rural villager with little education at a post elementary school level.

Absorbtive capacity varies greatly from one culture to another. Too frequently, the developed countries are unable to gage the optimum speed necessary for implementation and deployment. In the private sector this generally is the result of a desire for a quick financial return, whereas in the institutional sector, it is the result of naivite. In many developing countries there is a real resistance and fear to foreign technology by a rural work force that simply is not equipped with the education necessary for rapid technological advancement, such is the case in

India in the coal-mining sector. Although it is a giant with respect to coal reserves, the country has simply been unable to absorb the technological training and implementation as quickly as the Western world would like.

In the process of defining the optimum roles for local business and government institutions and their interraction with the international lending institutions and multinationals, often intercultural and interlinguistic sensitivies are either ignored or not brought forward due to shyness on the part of the developing country leading to institutional arrangements which cannot be succesful over the long term. The many family planning commissions in India are typical of this. Expecting a rural Indian woman to discuss her sex life with a strange man - for it is the men who head the commissions - is tantamount to public rape. Showing films similarly will not work unless the sexes are totally separated. Indeed the only family programme that appeared to be effective was the economically incentive vasectomy for a free radio or Rs 100. The fact that many men underwent many successive vasectomies eventually led to the realization that this programme also had failed.

In their desire to hasten the development process, donor countries have inadvertantly sent inexperienced people to design and implement programmes. In the top echelons of government and business, there is generally some communality as to language and cultural awareness, however on the actual project level grave mistakes have been committed due to sheer language and cultural ignorance, deeply offending personnel in the recipient country.

This may result in those personnel doing their utmost to ensure the project's failure, even though its implementation may be in their country's best interest.

An important aspect of the economic or technology transfer program should be the overall strengthening of the local entities, especially the academic institutions. These can play a major role in the implementation of development projects. The designing of curricula specifically geared to the needs of its society is paramount. This may include very basic courses which may not be the most intellectually rewarding but are the most necessary. A comprehensive curricula may also include language training targeted at those countries with the most highly developed technology in the field.

Recruiting those faculty and staff for in-country service who have adequate and up-to-date training is essential. In this respect, one should endeavour to be altruistic and recognize that a rival institution or a foreign country may have better human resources. The institution should attempt to acquire the services of the best qualified personnel.

In developing overseas training programs for locals, sufficient economic incentives must be offered the trainees to make it worthwhile to return to their own countries and a realistic program of study offered. While the Fulbright programme has largely been a success, there have been cases where students were brought to the United States to study a space programme which bears no relevence or feasibility to the

needs and capabilities of their own countries. Such trainees would be far better off concentrating on agricultural advancement that would serve both their and their countries' needs.

In considering faculty exchange programmes, these were carried out with some success in the 1950s with the agricultural Technical Collaboration Missions of PL-480 (Public Law 480). While it may be beneficial for the academic institution as a whole to engage the services of a visiting faculty member for a year or two, unless the person can make a really effective contribution to the needs of the particular development programme, it is economically irresponsible on the part of both the donor and recipient institutions to consider ill-suited faculty members and those who are not technically competent in the language of the country.

In working collaboratively together, academics and businessmen must consider not just the intellectual purity of a particular programme but rather the needs of the government and the people. It makes little sense offering an advanced course in neurosurgery in a country where at most three neurosurgeons are needed. Programmes should be considered within the constraints of the budget and within the capabilities of the local workforce to maximize the economic return on the investment rather than the financial return.

Cultural considerations must also be taken into account in strengthening local institutions. Methods between the local banking entities and the multinational banking institutions may be diametrically opposed. In China and those countries having some

Chinese influence, for example Thailand, even today the bulk of banking sector activities are conducted based on simple overdraft lending. The cultural bias is opposed to tying up one's money for a long period of time, thus making virtually no long-term lending project which is essential for development a possibility.

In other countries where there is no confidence in the government's ability or concern for the individual, money is hoarded and buried underground. This makes any investment by the local population a practical impossibility and is an impediment in gaining the confidence of those countries that might consider investment on a parity basis.

Joint ventures, which are very popular among most technologically advanced nations are considered virtually impossible among some developing nations. With disregard and lack of need for contractual procedure, in Asian society many deals are sealed with a handshake. It is a simple fact that if one party cheats on the deal, so much the worse for him.

In many developing countries, there is considerable interraction among government and business institutions contrary to the practice in the United States where government and business frequently find themselves on opposite sides, as for example antitrust and conflict of interest laws. In such countries, there is considerable movement of the government people to private industry and vice versa without any perceived conflict of interest. This may promote and achieve greater understanding of each other's needs, however it does invariably add to the

corruption factor.

In technology transfer as in many business arrangements, political factors often outweigh sociological ones. Certain governments have a strong preference to receiving aid from one country as opposed to another. Nationalistic attitudes can also play an important part. It is advisable to bear this in mind when marketing these countries.

Religious considerations vary from country to country, and even within the country from region to region. One developing country may be very technologically advanced in the urban areas and extremely ill equipped in the rural ones. It is incumbent upon the more advanced countries to sensitize themselves to the religion in the country in which they hope to do business. Provisions should be made for all eventualities, for example in Moslem countries, who is permitted to work the equipment, how many prayer breaks a day are required, how frequently the machinery must be totally shut down to accomodate religious holidays. Sucess of programmes in these countries is extremely dependent upon the design and awareness of the problem.

Developing countries go through the economic development process basically in three stages. The first stage requires emphasis on the development of programmes and institutions to meet the most basic needs of the society, such as housing, health care, food, and education. All of these sectors require government-supported programmes and all are complex in terms of foreign donor involvement as languages and culture play the greatest role. Usually, programmes designed to develop these

basic needs last over decades and must keep pace with population growth rates, which are significantly higher than those in the Western world.

The second stage involves a continuation of those programmes in the first stage as well as implementation of new programmes and creation of new institutions for the development of light commerical and industrial sectors, such as power generation; basic industries including paper, textiles, plastics; some advanced industries depending upon locally available resources, and the development stage of the country. With the beginning of the second stage, effective collaboration between foreign and local institutions takes on a new significance -- utilization of optimum local and foreign labour and capital mix; cross cultural sensitivities in terms of working environment, social benefits, etc.; continuous training and technology transfer from foreign experts to local managers and finally, the ultimate conclusion of any development process, namely, transferring full technical knowhow and management to the local personnel. Usually, this process takes anywhere from two to five decades, depending on a host of both indigenous and foreign factors. In recent times, Thailand offers the most impressive example of a country which has used development aid and brought itself forward to be one of the fastest growing economies in the Asia region.

The third stage usually involves the graduation of a country from its developing country status to a developed economy. In the context of the multilateral financial institutions, this

would be referred to as a transisition from a borrowing member country to a donor member country. Examples of countries which have clearly attained the third stage of development are South Korea, Singapore, and Taiwan. During this stage, the country generally has achieved its objectives in terms of meeting basic human needs, developed an impressive infrastructure and industrial base, and is engaged in high technology activities aimed at continuous advancement of the quality of life and the buying power of the individuals. An important question which largely remains unanswered is -- how significant was the role of cross cultural sensitivities, language and communications in effecting this process? Answers must come from in-depth studies of each country individually.

From the above discussion, some key issues emerge. Language, culture, religion and communications, without question have a strong relevence on the overall social and economic development process. There are numerous examples of development assistance which have resulted in miserable failure because the assistance programmes were not designed with specific consideration of these factors. Conversely, the French have been most successful in designing and implementing programmes with the utmost sensitivity to local culture and language. They manage this by putting in their own capital, then reinvesting profits back into the country; developing the programme in-country; and integrating the local populace as much as possible.

Mistakes of the past clearly make a case that the role of language, culture and communications should be assessed at the

early design stages of any development programme. This will result in two specific benefits, firstly, when put to the test of these local issues, some programmes will likely be undesirable and hence would be eliminated. Secondly, those programmes with the potential of success will benefit from the explicit incorporation of the language and culture-related issues. This will ensure that the overall development process is efficient and well received by the developing country.

Language and culture have and can play a major role in collaborations between local and foreign business partners for a variety of projects. History in some of the more developed countries demonstrates that the industrial development process has largely come from aggressive initiatives developed in the private sector. While in most developing countries the industry prefers to depend on the government and hide under its protection, true gains in efficiency and profitability come from competition and a free market-oriented economic approach. In this sense, a fundamental requirement is the development and strengthening of local financial institutions and capital markets. This often requires infusion of capital from foreign banks and the development of adequate means to foster communications between local and foreign financial institutions.

In the entire process of development, independently of the sector, academic institutions have a great role to play. In some of the developing countries, unfortunately, the academic institutions are the last to receive justifiably large shares of government grants and funds which may end up either in a bauxite

plant, in offshore accounts of corrupt bureaucrats or in ill-conceived vacation resorts with practically no demand for their use. The academic institutions can play a significant role in designing and implementing specific programmes linked to cultural, language, and technology transfer which will provide trained workers, engineers and managers for development projects. There are several sporadic cases of this activity, several of them funded by the USAID. Unfortunately, such foreign-aided programmes have suffered with two problems. First, in some cases the universities have found them not intellectually challenging enough. Secondly, in many cases the government, while eager to receive such grants from foreign agencies, has not shown the necessary committment and follow through. Both of these issues need to be adressed in future programmes.

During the last couple of decades, a common pattern of development assistance to developing countries has been to place a number of senior ex-patriate advisors in various government institutions. The main function of these advisors has been to work with senior government bureaucrats in a number of areas ranging from developing proposals for foreign loans and grants to advising on policy reform and in some cases, developing country budget documents. While this mode of assistance has some value, it unfortunately creates a continuous dependence on the part of the government on the availability of such advisors, thereby defeating the main purpose of development assistance which is the transfer of expertise to local managers. Also, what has often been missing is the provision of advisors sensitive enough to

work with local experts and trained in language, culture and communications to develop specific procedures and guidelines to be used in development projects.